

### **REMARKS**

Claims 1-8 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

The disclosure was objected to based on a number of informalities. Amendments have been made to the specification to overcome this objection. Withdrawal thereof is thus respectfully requested.

Claims 1, 3 and 7 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Mann et al. (US 5,251,210). Claims 2 and 8 were rejected under 35 U.S.C. § 103 as being unpatentable over Mann et al. in view of Castellano et al. (US 5,065,396). These rejections are respectfully traversed for the following reasons.

Claim 1 recites a method of increasing bandwidth utilization of a transmission channel having a first bandwidth capacity and operative at a first transmission rate. The method includes providing one or more input bit streams each having a transmission rate that does not exceed that of the first transmission rate. At least one of said one or more input stream has a plurality of overhead bits associated therewith. The method further involves dividing the one or more input bit streams into a plurality of sub-streams, each having bandwidth lower than said first bandwidth capacity and selecting a group of sub-streams out of the plurality of sub-streams, which group has a combined bandwidth just lower than the first bandwidth capacity. The group comprises at least one sub-stream which comprises at least some of the plurality of overhead bits. The method further involves carrying the selected group of sub-streams over said transmission channel, and assembling

the selected group of sub-streams into an output bit stream. This is not taught or disclosed by the prior art of record.

Applicant respectfully submits that the cited patent teaches away from the present invention. It is true that both the '210 patent and the present application make use of a technology known as inverse multiplexing, whereby a signal that has a high bandwidth is divided into a number of lower bandwidth signals, and the number of the lower bandwidth signals are transmitted instead of that high capacity signals. But this is where the comparison ends.

The basic idea behind the present invention may be illustrated in the particular example claimed in claim 4 (which was indicated as allowable by the Examiner). Suppose one is required to transmit E-3 signals where the available transmission channel (the available "pipe") is of a DS3 signal. The E-3 signal is transmitted at a rate of 34.368 Mbps, whereas the available "pipe" rate is 44.736 Mbps. The problem which the present invention seeks to solve in this example, is how to use the available pipe efficiently. The solution provided is to divide the E-3 signal, including its header, into sub-streams (e.g. to 18 E1 sub-streams, each at a rate of 2.048 Mbps). In this case, 3 additional E1's can be transmitted along that pipe, bringing the total number of the E1's transmitted to 21. In this way, the present invention achieves an increase in the efficiency of transmission.

It is respectfully submitted that in contrast to the above method, Mann teaches away from the present invention. According to the method described in Mann, the appropriate way is to have the data payload of the high rate stream divided by "permitting use of multiple clear T1 channels to effectively obtain a single high bandwidth channel having an effective payload data rate of  $N \times 1.536$  megabits

per second and a channel rate of  $N \times 1.544$  megabits per second." Col, 6 lines 5-9. Therefore, to achieve the result described by Mann, one must carry out a process of stripping off the overhead bits prior to the division into and transmission of the sub-streams. This additional process is a step that the present solution avoids.

To advance prosecution, Applicant has amended claim 1 to recite that at least one of the input streams has a plurality of overhead bits associated therewith and the group of sub-streams selected comprises at least one sub-stream which comprises at least some of the plurality of overhead bits. As noted above, Mann does not include transmission of the overhead bits in the sub-streams. Accordingly, these features are not taught or suggested by Mann. For at least this reason, Applicant respectfully submits that claim 1 is patentable over Mann.

Claim 3 depends from and includes the recitations of claim 1. Applicant respectfully submits that claim 3 is patentable in and of itself and for the reason discussed above with respect to claim 1.

Claim 7 is believed to be allowable for at least the reasons discussed above with respect to claim 1.

With respect to claims 2 and 8, Applicant respectfully submits that the above deficiencies noted with respect to Mann are not solved by the Castellano. Accordingly, claims 2 and 8 are believed to be patentable in and of themselves and as they depend from and include the recitations of claims 1 and 7, respectively.

Applicant notes with appreciation the indication that claims 4-6 are allowable over the prior art of record.

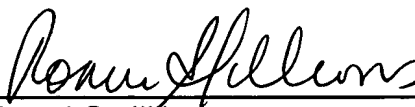
In view of the above amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections of record.

Applicant submits that the application is in condition for allowance and early notice to this effect is most earnestly solicited.

If the Examiner has any questions he is invited to contact the undersigned at 202-628-5197.

Respectfully submitted,

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